As part of the legislation passed last session to create the new Department of Health and Human Services (DHHS), the Bureau of Health was renamed the Maine Center for Disease Control and Prevention (Maine CDC). The federal Centers for Disease Control and Prevention will be referenced as "CDC".

The purpose of the Epi-Gram is to distribute timely and science-based information to guide Maine's healthcare professionals in issues of public health and infectious disease importance and to promote statewide infectious disease surveillance.

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April 2006 Issue Contents

New Test Methods at the State Public Health Laboratory

The Health and Environmental Testing Laboratory (HETL) microbiology section has established a Methods Evaluation Team (MET) to conduct research and development into new test methods in the state public health lab. The major focus of the MET is to develop rapid, sensitive and cost effective tests to meet the needs of infectious disease epidemiologists and healthcare providers in Maine. The MET is currently evaluating tests based on real-time polymerase chain reaction (PCR), an extremely powerful analytical technique that is quickly becoming a mainstay of clinical microbiology. The power of real-time PCR is that small quantities of DNA or RNA from microbial pathogens can be specifically amplified and detected in vitro without the need to culture the organism itself. Precision optics monitor the presence of

target pathogen marker-genes by fluorescence from exquisitely sensitive DNA probes. The ability to detect pathogenic organisms without culturing them often makes it possible to obtain results in hours rather than days and is especially important with organisms that are difficult or dangerous to culture. An additional advantage of this technique is that it is infinitely flexible, accommodating new designs to detect unique genetic signatures in any organism.

A real-time PCR test for Bordetella pertussis, the bacterium that causes whooping cough, is currently in use at the HETL and has replaced the less sensitive direct fluorescence assay (DFA) (See October 2005 EpiGram). PCR for pertussis is currently done on all submitted specimens in addition to culture with no additional charge. PCR tests are used for West Nile Virus (WNV) and Eastern Equine Encephalitis (EEE) surveillance in Maine. These tests are used to detect the presence of these viruses in local populations of mosquitoes, birds and mammals, natural reservoirs that could lead to human infection. Human serum or cerebrospinal fluid are currently tested for WNV and EEE using ELISA methods, as PCR testing is not recommended for these samples due to rapid viral clearing during the course of infection. A reverse-transcriptase PCR (RT-PCR – a PCR test for RNA targets) test for influenza viruses is in the validation stage and is being used in parallel with traditional microbiology methods during this influenza season. This RT-PCR test also provides the capability to subtype influenza A viruses and detect the H5N1 avian influenza subtype. A full evaluation of the influenza RT-PCR methods will be performed at the conclusion of the influenza season and will be presented in a future Epi-Gram article. A new RT-PCR test for noroviruses has recently been validated. Noroviruses are believed to be responsible for as many as half of foodborne gastroenteritis cases and RT-PCR is the most reliable method for detection of this pathogen, which could be critical for monitoring potential outbreak situations. Regional and infectious disease epidemiologists will arrange testing for norovirus at the HETL in potential outbreak situations.

With the rapid development of new technologies for clinical microbiology, the FDA has not licensed most tests for use as medical devices. As such, most tests are performed under an exemption for investigational devices. This does not mean, though, that standards and quality assurances are not strictly adhered to. On the contrary, extensive validation, controls and quality assurance guidelines are established for laboratories using real-time PCR. Currently, all clinical PCR tests performed at HETL are done in parallel with traditional microbiological testing (e.g. culture). PCR offers a rapid result and traditional microbiological methods provide confirmatory results. However, analytical sensitivity (the ability to detect small numbers of pathogens) is often substantially greater for PCR than it is for traditional methods. Also, PCR is capable of detecting microbes that are non-viable due to antibiotic treatment of the patient or sub-optimal transport conditions. Thus, PCR is expected to frequently detect pathogens where culture fails to do so on the same sample, resulting in ‘unconfirmed’ positive results. When quality control systems are within acceptable parameters, PCR results in these cases are expected to be true positives despite the inability to confirm the result with culture. A future aim is to develop confirmatory PCR based tests that target distinct regions of the microbial genomes. This is the strategy for detection of potential bioterrorism agents, which are often found in very small quantities and may be unsafe to culture.

It is anticipated that in the near future additional capacity for DNA sequence analysis at the HETL will enhance the State’s capability to perform a wide variety of molecular tests as well as partner in complex studies in molecular epidemiology. The MET is lead by HETL Microbiology Senior Scientist Ken Pote, Ph.D. (ken.pote@maine.gov). Information about activities at the HETL can be obtained online at http://www.maine.gov/dhhs/etl/homepage.htm .

Contributed by: Peter Smith

Meningococcal Prophylaxis

Maine Center for Disease Control and Prevention (Maine CDC) recently received reports of meningococcal disease in which large numbers of persons were placed on chemoprophylaxis. Health care providers aware of national guidelines for chemoprophylaxis of meningococcal disease.

Invasive meningococcal disease is defined as a clinically compatible case AND isolation of Neisseria meningitidis from a normally sterile site (e.g., blood or cerebrospinal fluid {CSF} or, less commonly, synovial, pleural, or pericardial fluid) or skin scrapings of purpuric lesions. Neisseria meningitidis colonizes mucosal surfaces of the nasopharynx and is transmitted through direct contact with large droplet respiratory secretions from patients or asymptomatic carriers. In the event of invasive meningococcal disease, Maine CDC uses the meningococcal chemoprophylaxis recommendations published by the federal Centers for Disease Control and Prevention in the MMWR (May 27, 2005, RR-7, http://www.cdc.gov/mmwr/pdf/rr/rr5407.pdf).

Chemoprophylaxis to prevent meningococcal infection is recommended for close contacts of patients with invasive meningococcal disease, which would include

- Household members,
- Child-care center contacts, and
- Anyone directly exposed to the patient's oral secretions (e.g., through kissing, mouth-to-mouth resuscitation, endotracheal intubation, or endotracheal tube management).

Chemoprophylaxis should be administered as soon as possible, ideally <24 hours after identification of the index patient. Administration of chemoprophylaxis >14 days after onset of illness in the index patient is probably of limited or no value. The recommended agents for chemoprophylaxis include rifampin, ciprofloxacin and ceftriaxone (Table). Chemoprophylaxis is not recommended in the case of non-invasive meningococcal disease.

Schedule for administering chemoprophylaxis against meningococcal disease

Drug	Age group	Dosage	Duration and route of administration*
Rifampin†	Children aged <1 mo Children aged ≥1 mo Adults	5 mg/kg body weight every 12 hrs 10 mg/kg bodyweight every 12 hrs 600 mg every 12 hrs	2 days 2 days 2 days
Ciprofloxacin‡	Adults	500 mg	Single dose
Ceftriaxone	Children aged <15 yrs	125 mg	Single IM℻ dose
Ceftriaxone	Adults	250 mg	Single IM dose

* Oral administration unless indicated otherwise.
† Not recommended for pregnant women because it is teratogenic in laboratory animals. Because the reliability of oral contraceptives might be affected by rifampin therapy, consideration should be given to using alternative contraceptive measures while rifampin is being administered.
‡ Not usually recommended for persons aged <18 years or for pregnant and lactating women because it causes cartilage damage in immature laboratory animals. Can be used for chemoprophylaxis of children when no acceptable alternative therapy is available. Recent literature review identified no reports of irreversible cartilage toxicity or age-associated adverse events among children and adolescents (Source: Burstein GR, Berman SM, Blumer JL, Moran JS. Ciprofloxacin for the treatment of uncomplicated gonorrhea infection in adolescents: does the benefit outweigh the risk? Clin Infect Dis 2002;35:S191–9).
℻ Intramuscular.

Report cases of invasive meningococcal disease immediately by telephone on the day of recognition or strong suspicion by calling the Infectious Disease Division at 1-800-821-5821. An epidemiologist is available 24 hours a day to receive disease reports and provide consultation on chemoprophylaxis and other infection control measures.

Contributed by: Anne Sites

Notice to readers: Investigation of invasive cases and clusters of CA-MRSA

The purpose of this notice is to inform public health partners of recent changes in public health surveillance of CA-MRSA. Only reports of invasive CA-MRSA and clusters will be investigated on an individual basis.

For surveillance purposes, invasive CA-MRSA is defined as MRSA isolated from a normally sterile site (e.g., blood, cerebrospinal fluid [CSF], pleural fluid, peritoneal fluid, pericardial fluid, surgical aspirate, bone, joint fluid, or internal body site [e.g., lymph node, brain) in a patient with the following characteristics:

- Diagnosis in an outpatient setting or within 48 hours after admission to the hospital.
- No medical history of MRSA infection or colonization.
- No medical history in the past year of:

    -- Hospitalization
    -- Admission to a nursing home, skilled nursing facility, or hospice
    -- Dialysis
    -- Surgery

- No permanent indwelling catheters or medical devices that pass through the skin into the body.

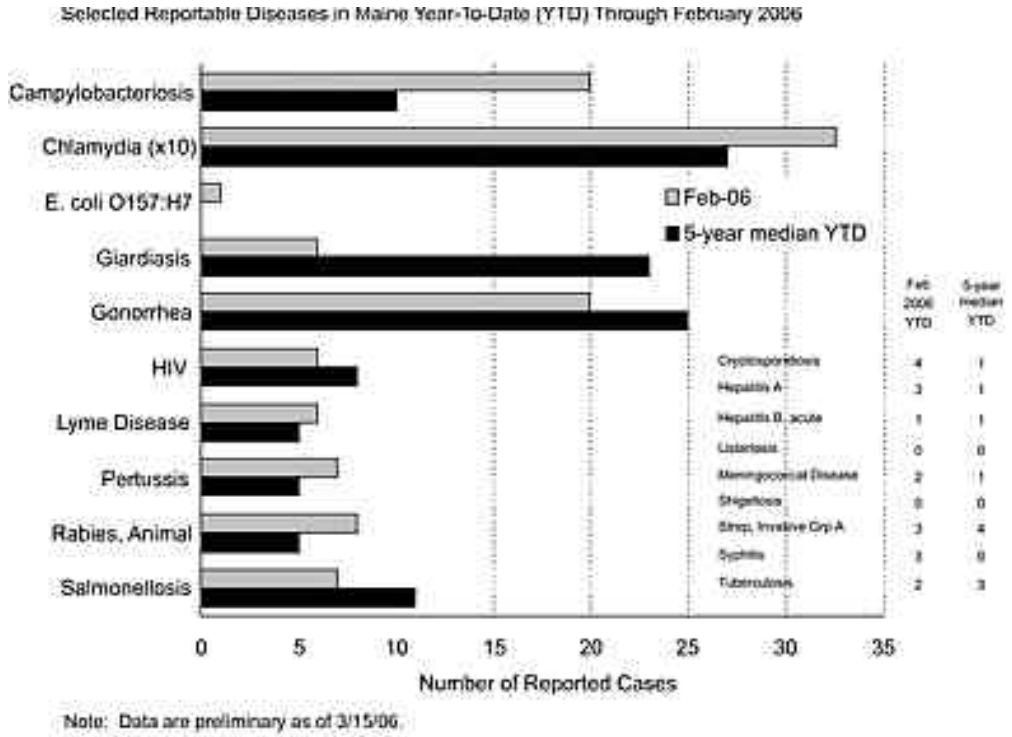
Maine CDC will also investigate clusters of CA-MRSA and will work with facilities to control outbreaks. Cases that reside in congregate settings and that have a history of contact sports are also of concern and will be investigated on a case-by-case basis. When evaluating patients with MRSA infections, health care providers are encouraged to ask patients the following questions to determine if this patient's infection is associated with a cluster of CA-MRSA cases or if additional follow up is needed by Maine CDC. If a patient with MRSA replies "Yes" to any of the following questions, this case should be reported to Maine CDC as a suspected cluster.

- Has the patient had contact with others who have similar infections (e.g. household, school, work)?
- Does the patient participate in contact sports?
- Does the patient reside in a congregate living facility (e.g. correctional facility, group home)?

To report a case of invasive CA-MRSA or a suspected cluster of CA-MRSA, call the Infectious Disease Division at 1-800-821-5821 or fax reports to 1-800-293-7534. An epidemiologist is available 24 hours a day to receive disease reports and provide consultation on infection control measures. For more information on MRSA, see the Infectious Disease Division web page on MRSA: http://www.maine.gov/dhhs/boh/methicillin-resistant_staphylococcus_aureus.htm

Contributed by: Anne Sites

Selected Reportable Diseases in Maine Year-to-Date through February 2006



Contributed by: Andrew Pelletier

Raising Awareness of Viral Hepatitis in Maine

May 2006 has been designated by the federal CDC as National Viral Hepatitis Awareness Month. The Maine CDC, in conjunction with partners from across the state and the northeast, is sponsoring a variety of activities designed to educate the public and medical community about the risks of viral hepatitis as well as its prevention and treatment. Health care providers may receive an increase in requests for testing and vaccination during this period.

An estimated 23,000 Mainers have evidence of chronic hepatitis C infection, however, only about 30 percent are aware of their infection. Approximately 4,000 Mainers have chronic hepatitis B infection and between 2000 and 2004, an annual average of 9 (range 6-14) new cases occurred. During the same time, an annual average of 15.2 (range 9-23) cases of hepatitis A occurred in Maine. With the potential outcomes of serious disability or death, primary prevention and early detection of viral hepatitis is essential.

Some of the events planned for May to raise awareness about viral hepatitis in Maine include community and health care provider educational presentations, the release of the updated Maine CDC Viral Hepatitis web site, distribution of educational materials in public places, and increased media attention. The medical community can assist in these efforts by assessing patient risk factors for hepatitis A, B and C and providing testing and vaccination as appropriate.

Viral Hepatitis Awareness Month offers a great opportunity to educate patients about liver disease and how remain healthy. For more information about activities in your community, contact Mary Kate

Appicelli at 1-800-821-5821 or go online to: www.mainepublichealth.gov under the "MCDC Program Index", click on "Hepatitis."

Contributed by: Mary Kate Appicelli

Maine CDC to Launch HIV Prevention Media Campaign for Gay and Bisexual Men

In June 2006, the Maine CDC will launch a major public information campaign focused on HIV prevention among sexually active men who have sex with men (MSM). This population comprises approximately 55% of the estimated 1,500 people living in Maine with HIV. During the past five years, 238 persons in Maine were newly diagnosed with HIV, with MSM comprising 60% of this total (143 cases).

The Maine CDC is working with The Caraway Group, awarded funding through a Request For Proposal Process, to develop, implement, and evaluate the campaign. The campaign will use media, including print materials along with accompanying website and radio PSA components, to reach MSM throughout the State with important information about HIV prevention. It will be designed to promote the following community norm that enhances HIV prevention, "Take responsibility for your own sexual health."

The campaign will deliver four HIV prevention messages related to this norm:

- Know your HIV status (Get tested);
- Disclose your HIV status and ask your partner to disclose his status (Know what you're getting into when you have sex);
- Use a condom for anal or vaginal sex with a partner of unknown or different status (Use condoms for anal or vaginal sex if there's any risk of HIV);
- Knowingly transmitting HIV is unacceptable (People living with HIV have a responsibility to prevent their transmission of HIV to others).

Campaign materials will be developed and distributed through HIV prevention providers, STD clinics and other venues. Campaign materials will also be available at no cost to others serving the MSM community. The Maine CDC encourages health care providers to make the information available and to reinforce these messages to their MSM patients.

The desired outcomes for this campaign are to increase awareness of the community norm, to increase counseling, testing and referral services, and to increase the knowledge of one's HIV status among MSM in Maine.

The Maine HIV, STD and Viral Hepatitis Program sponsors HIV prevention and care initiatives throughout the state. The Program is available to assist health care providers who diagnose patients with HIV/AIDS, and provides counseling about area resources and partner notification to patients who test positive for HIV. Please contact the HIV, STD, and Viral Hepatitis Program at 207-287-3747 for more information.

Contributed by: James Markiewicz and Mark Griswold

Save The Date

2006 Immunization Update
Current Practices and Emerging Issues
One Conference – Two Separate Days and Locations

Wednesday, May 10, 2006
Houlton Regional Hospital
Houlton

Thursday, May 11, 2006
Augusta Civic Center
Augusta

Conference highlights include:

- New Immunizations and Emerging Issues
- Vaccine Management
- 2006 Varicella Outbreak – a Local Perspective
- ImmPact2 – Using the Registry to Improve Rates
- and more

Registration material to follow
For more information contact:Tammy McLaughlin, 207-626-3615
http://www.neias.org/MeCDC/immunme.html

Presented By

Maine Center for Disease Control and Prevention,
Immunization Program

Please call Maine CDC to report all reportable diseases:

Telephone Disease Reporting Line:
24 hours / 7 days
1 800 821-5821

Consultation and Inquiries:
24 hours / 7 days
1 800 821-5821

Facsimile Disease Reporting Line:
24 hours / 7 days
1 800 293-7534

Maine Department of Health and Human Services
Maine Center for Disease Control and Prevention
(Formerly Bureau of Health)
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Augusta, ME 04333-0011